

**IN THE UNITED STATES DISTRICT COURT  
FOR THE SOUTHERN DISTRICT OF NEW YORK**

CARNEGIE INSTITUTION OF  
WASHINGTON,

M7D CORPORATION,

*Plaintiffs,*

v.

FENIX DIAMONDS LLC,

*Defendant.*

Civil Action No. 1:20-cv-0200 (JSR)

Honorable Jed S. Rakoff

**DEFENDANT FENIX DIAMONDS  
LLC'S AMENDED AFFIRMATIVE  
DEFENSES AND COUNTERCLAIMS**

FENIX DIAMONDS LLC,

*Counterclaim-Plaintiff.*

v.

CARNEGIE INSTITUTION OF  
WASHINGTON,

M7D CORPORATION,

*Counterclaim-Defendants.*

Pursuant to Federal Rule of Civil Procedure 15(a)(1)(B), Defendant Fenix Diamonds LLC (“Fenix”) asserts the following amended defenses, and Fenix asserts the following amended counterclaims, against Plaintiffs Carnegie Institution of Washington (“Carnegie”) and M7D Corporation (“M7D”) (collectively, “Plaintiffs”).

**AMENDED AFFIRMATIVE DEFENSES**

Without any admission as to the burden of proof, burden of persuasion, or the truth of any allegation in the Amended Complaint, Fenix states the following amended affirmative defenses.

Fenix reserves the right to modify its defenses and to raise additional defenses as discovery proceeds.

### **FIRST AFFIRMATIVE DEFENSE**

#### **(Non-Infringement)**

1. Fenix has not infringed, and does not infringe, any claim of the '078 Patent or the '189 Patent (“the Asserted Patents”) literally, under the doctrine of equivalents, directly or indirectly, contributorily, by inducement, or in any other manner.

### **SECOND AFFIRMATIVE DEFENSE**

#### **(Invalidity)**

2. The claims of the '078 Patent and of the '189 Patent that Plaintiffs have asserted against Fenix (claims 1, 6, 7, 11, 12, and 16 of the '078 Patent and claims 1 and 2 of the '189 Patent—collectively, “the Asserted Claims”) are invalid for failing to comply with the conditions and requirements for patentability set forth in the United States Patent Laws, including, without limitation, in 35 U.S.C. §§ 101, 102, 103, 111, 112, 116, 132, and 251, and the rules, regulations, and laws pertaining thereto.

3. The Asserted Claims are invalid for the reasons set forth in Fenix Diamonds LLC’s Preliminary Invalidity Contentions Under Local Patent Rule 7 (“Preliminary Invalidity Contentions”) served on March 20, 2020, and Fenix Diamonds LLC’s First Supplemented Preliminary Invalidity Contentions Under Local Patent Rule 7 served on May 26, 2020 (“First Supplemented Preliminary Invalidity Contentions”), incorporated herein by reference, which include the following invalidity grounds, and for other invalidity grounds that will be provided as this action progresses.

a. U.S. Patent No. 5,628,824 to Vohra et al. (“Vohra”) invalidates the Asserted Claims of the ’078 Patent under at least 35 U.S.C. § 102.

b. Vohra in view of U.S. Patent No. 5,449,412 to Pinneo (“Pinneo”) invalidates the Asserted Claims of the ’078 Patent under at least 35 U.S.C. § 103.

c. The Asserted Claims of the ’078 Patent are not enabled and thus invalid under 35 U.S.C. § 112 because the temperature sensing equipment described in the ’078 Patent is incapable of providing temperature measurements necessary to maintain a sub-20°C growth surface gradient. One of ordinary skill in the art would not be able to practice the purported invention in the Asserted Claims without undue experimentation.

d. Upon information and belief, Plaintiffs discovered that significant experimentation beyond the technical details described in the ’078 Patent and generally known in the art at the time of purported invention would be required to develop a temperature sensor with the requisite accuracy.

e. The Asserted Claims of the ’078 Patent are not enabled and thus invalid under 35 U.S.C. § 112 because the equipment described in the ’078 Patent is incapable maintaining a growth surface gradient at any value in the claimed range (i.e., 0–20°C), much less throughout the full scope of the claimed range (e.g., 0°C), even if it was possible to accurately measure all growth surface temperatures.

f. Upon information and belief, Plaintiffs discovered that significant experimentation beyond the technical details described in the ’078 Patent and generally known in the art at the time of purported invention would be required to make equipment capable of maintaining a growth surface gradient at any point in the claimed range (i.e., 0–

20°C), let alone throughout the full scope of the claimed range (e.g., 0°C), even if it was possible to accurately measure all growth surface temperatures.

g. The Asserted Claims of the '078 Patent are not patent eligible and thus invalid under 35 U.S.C. § 101. The Asserted Claims of the '078 Patent merely apply equipment that existed before the date of purported invention to monopolize the well-known natural principle that uniform diamond growth requires uniform growth surface temperatures.

h. For example, upon information and belief, Plaintiffs have represented that it is impossible to grow diamonds through microwave plasma chemical vapor deposition without infringing the '078 Patent, thus evidencing Plaintiffs' intent to monopolize this natural principle.

i. European Patent Application No. 0 671 82 to Anthony et al. ("Anthony") invalidates the Asserted Claims of the '189 Patent under at least 35 U.S.C. § 102.

j. U.S. Patent No. 4,124,690 to Strong et al. ("Strong") invalidates the Asserted Claims of the '189 Patent under at least 35 U.S.C. § 103.

k. The Asserted Claims of the '189 Patent are not enabled and thus invalid under 35 U.S.C. § 112 because the equipment described in the '189 Patent is incapable of applying temperatures and pressures throughout the full scope of the claimed range.

l. Upon information and belief, Plaintiffs discovered that significant experimentation above the technical details described in the '189 Patent and generally known in the art at the time of purported invention would be required to make equipment capable of applying temperatures and pressures throughout the full scope of the claimed range.

m. Upon information and belief, Plaintiffs discovered that significant experimentation above the technical details described in the '189 Patent and generally known in the art at the time of purported invention would be required to accurately determine the diamond-to-graphite transition line that separates the graphite stable region from the diamond stable region.

n. The Asserted Claims of the '189 Patent are not patent eligible and thus invalid under 35 U.S.C. § 101. The Asserted Claims of the '189 Patent merely apply equipment that existed before the date of purported invention to monopolize the well-known natural principle that high pressures and temperatures improve diamond quality.

### **THIRD AFFIRMATIVE DEFENSE**

#### **(No Willfulness)**

4. Fenix has not intentionally, willfully, or deliberately infringed any Asserted Patent.

### **FOURTH AFFIRMATIVE DEFENSE**

#### **(No Pre-Suit Damages)**

5. Plaintiffs are precluded from seeking recovery for alleged infringement that occurred pre-suit under 35 U.S.C. § 287. There was no pre-suit notice of purported infringement of the Asserted Patents under, *e.g.*, 35 U.S.C. § 287(b)(2) and (b)(5), and, at all times, Fenix has acted in good faith consistent with, *e.g.*, 35 U.S.C. § 287(b).

### **FIFTH AFFIRMATIVE DEFENSE**

#### **(Inequitable Conduct)**

6. The '189 Reissue Patent is unenforceable because it was acquired through inequitable conduct or, in the alternative, because the '189 Patent is a reissue of a patent that was procured by inequitable conduct.

**The '189 Reissue Patent Was Acquired Through Inequitable Conduct**

7. On June 3, 2002, Robert H. Frushour and Wei Li filed U.S. Patent Application No. 10/161,266 (“the ’266 Application”), which listed Frushour and Li as joint inventors. The ’266 Application was accompanied by a Combined Declaration and Power of Attorney. That Declaration included the signed oaths of inventorship of both Frushour and Li. It states as follows: “I believe I am . . . an original, first and joint inventor . . . of the subject matter which is claimed and for which a patent is sought on the invention entitled: METHOD OF MAKING ENHANCED CVD DIAMOND.” The signed oaths of inventorship further state “I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true.” On May 22, 2002, Frushour and Li assigned their rights in the ’266 Application to Phoenix Crystal Corporation and the Application eventually issued as the ’610 patent on November 2, 2004.

8. The ’610 patent relates to high-pressure/high-temperature processes for single crystal CVD diamond. Dr. Frushour is listed as an inventor on at least 20 United States patents related to high-pressure/high-temperature diamond technology.

9. On July 13, 2004, Russell Hemley, Ho-Kwang Mao, and Chih-Shiue Yan filed U.S. Patent Application No. 10/889,171 (“the ’171 Application”), which listed Hemley, Mao, and Yan as joint inventors. Hemley, Mao, and Yan assigned the ’171 Application to Carnegie Institution of Washington (“Carnegie”), effective July 12, 2004.

10. Along with the ’171 Application, Hemley, Mao, and Yan included a request for an interference proceeding with the ’266 Application, accompanied by a Declaration signed by Hemley, Mao, and Yan on July 12, 2004. The interference request and Declaration were made part

of the file for the '266 Application on August 30, 2004. Hemley, Mao, and Yan submitted the Declaration to the Patent Office without ever speaking with Frushour.

11. The claims of the '171 Application were drafted to be identical to the claims of the '266 Application and the '610 Patent. If the '171 Application and Declaration are to be believed, neither Frushour nor Li were inventors of the subject matter claimed in the '610 and '189 Patents; only Hemley, Mao, and Yan were.

12. On June 11, 2020, Frushour appeared for depositions and testified under oath as to his contributions to the subject matter described and claimed in the '610 Patent. At the June 11, 2020, deposition, Frushour corroborated his testimony with the '266 Application that led to the '610 Patent, the Combined Declaration of Frushour and Li, and the contemporaneous lab notebooks of Li, which Frushour had maintained since they were created at Phoenix Crystal Corporation.

13. At the June 11, 2020, deposition, Dr. Frushour reviewed the Declaration of Hemley, Mao, and Yan dated July 12, 2004, and disagreed with its content. Again, this Declaration was submitted by Hemley, Mao, and Yan without ever speaking to Frushour, a named inventor on the '266 Application and the '610 Patent.

14. The Declaration of Hemley, Mao, and Yan dated July 12, 2004, contains false statements. Contrary to the Declaration, Hemley, Mao, and Yan did not convey the claimed annealing steps to Frushour or Li. Li's contemporaneously maintained notebook does not indicate that Hemley, Mao, or Yan provided any annealing conditions to use. Instead, Frushour and Li already knew what process conditions to use when anneal CVD diamonds because (i) they had previously induced color change in natural diamonds using the exact same annealing conditions, (ii) they thought those same annealing conditions would also work to induce color change in CVD

diamond, and (iii) that process did, in fact, successfully induce the same color change in CVD diamonds.

15. On May 6, 2004, Paul Kokulis, the prosecuting attorney for the '171 Application, wrote to James Singer, the prosecuting attorney for the '266 Application. Kokulis expressed the view his client, Carnegie Institution of Washington, was the rightful inventor of the claims in the '266 Application. On June 17, 2004, Singer responded, requesting documents in support of Carnegie's claim to inventorship. Singer stated that he had no reason to believe the inventorship was incorrect and would continue to believe the inventorship was correct until Carnegie could provide evidence otherwise. On June 25, 2004, Kokulis responded but did not provide any such evidence. On July 13, 2004, Kokulis filed the '171 Application along with the Declaration dated July 12, 2004, attempting to provoke an interference. On November 22, 2006, the U.S. Patent Office rejected the Declaration and claims of the '171 Application, and Carnegie allowed the '171 Application to go abandoned on August 15, 2007.

16. On October 24, 2003, Phoenix Crystal Corporation assigned the '266 Application to GE Superabrasives, Inc. (effective October 1, 2003).

17. On December 31, 2003, GE Superabrasives, Inc. signed an agreement assigning its rights in the '266 Application to Diamond Innovations, Inc.

18. On November 2, 2004, the '266 Application issued as the '610 Patent, owned at the time by Diamond Innovations, Inc. and listing Frushour and Li as the sole inventors.

19. On September 4, 2008, Diamond Innovations, Inc. signed an agreement (effective June 30, 2008) transferring its interest in the '610 Patent to Carnegie Institution of Washington, subject to a non-exclusive license. This is the same Carnegie that tried to provoke an interference proceeding with the Application that led to the '610 Patent, based on a false Declaration.

20. On January 30, 2009, Carnegie Institution of Washington filed U.S. Patent Application No. 12/362,529 (“the ’529 Application”), seeking reissue of the ’610 Patent. In the ’529 Application, Carnegie, through the Declaration of Gary Kowalczyk, falsely declared that the ’610 Patent contained “[a]t least one error”—namely, that “Robert H. Frushour is incorrectly named on the 6,811,610 patent as an inventor and Russell J, Hemley, Ho-Kwang Mao and Chih-Shiue Yan are incorrectly not named as inventors.” In the Declaration, Kowalczyk and Carnegie, as well as each of Hemley, Mao, and Yan, did not inform the Patent Office of the previous failed attempt to challenge the inventorship of the ’610 Patent, omitted evidence that Diamond Innovations, Inc. believed Li and Frushour to be the correct inventors, and failed to explain that Carnegie, Kowalczyk, Hemley, Mao, and Yan had never contacted Frushour to discern whether he contributed to the claimed invention. Li could not have provided any credible information that Frushour was not an inventor since it would directly contradict Li’s own Declaration under oath to the Patent Office in the ’266 Application on May 22, 2002. At a minimum, Kowalczyk had an obligation to contact Frushour before declaring to the Patent Office he believed Frushour was not an inventor. Knowing that Frushour was a named inventor of the ’610 Patent, for Kowalczyk to state that “Frushour is incorrectly named on the 6,811,610 as an inventor” was a knowingly false statement, or at best a willfully blind statement, intended to deceive the Patent Office and to deprive them of material knowledge that Kowalczyk knew or should have known undermined his claim.

21. Had the Patent Office known any of these material facts, it would have required further investigation into Carnegie’s and Kowalczyk’s claim of erroneous inventorship, and the ’189 Patent would not have issued listing Li, Hemley, Mao, and Yan as inventors.

22. There was no mistake in the identification of Frushour and Li as inventors of the '610 Patent. Despite asserting a mistake in inventorship in the '529 Application, Carnegie and Kowalczyk did not include a Declaration in the reissue application from Mao, Hemley, Yan, or any of the named inventors of the '610 Patent. Moreover, no one contacted Frushour in connection with the reissue application to inquire whether there was a mistake in inventorship in the '610 Patent. The '529 Application later reissued as the '189 Reissue Patent.

23. The '189 Reissue Patent recites identical specification, figures and claims as the '610 Patent.

24. In contrast to the '610 Patent, which names Frushour and Li as the inventors of the claimed subject matter, the '529 Application improperly added Carnegie scientists Russell J. Hemley, Ho-Kwang Mao, and Chih-Shiue Yan as the inventors of the claimed subject matter. These are the same Hemley, Mao, and Yan that submitted a false Declaration in the '171 Application, an Application that the Patent Office rejected and Carnegie abandoned after failing to provoke an inventorship challenge in the Patent Office.

25. In contrast to the '610 Patent, which named Frushour and Li as the inventors of the claimed subject matter, the '529 Application improperly removed Frushour as an inventor of the claimed subject matter. Again, no one contacted Frushour about the reissue application to inquire whether there was a mistake in inventorship in the '610 Patent, much less whether he should be removed as an inventor. Carnegie and Kowalczyk therefore lacked a sufficient basis to allege Frushour was incorrectly named as an inventor.

26. Hemley, Mao, Yan, and Li, who are now named as co-inventors of the '189 Reissue Patent, as well as Carnegie and Kowalczyk, as the applicant for the '189 Patent, owed a duty of

candor to the Patent Office. Under 37 C.F.R. § 1.56, they had a duty to disclose information material to the patentability of the '189 Patent, including inventorship conflicts.

27. But Hemley, Mao, Yan, Carnegie, and Kowalczyk committed inequitable conduct by submitting a false Declaration to the Patent Office during the prosecution of the '171 Application. Neither that Declaration nor the failed attempt to provoke an interference was brought to the attention of the Patent Office in the '529 Application leading to the '189 Reissue Patent.

28. Upon information and belief, Carnegie and Kowalczyk specifically intended to deceive the Patent Office to falsely obtain recognition in the scientific community for its scientists, Hemley, Mao, and Yan, as the inventors of the claimed subject matter, and to secure the '189 Reissue Patent for Carnegie. Hemley, Mao, Yan, Carnegie, and Kowalczyk knew that they did not convey the claimed annealing steps to Frushour or Li, but still chose to submit a false Declaration to that effect in 2004 to the Patent Office. With an intent to deceive the Patent Office, they falsely alleged a mistake in inventorship to the Patent Office nearly five years after they abandoned their original inventorship challenge to obtain the '189 Reissue Patent and add themselves as named inventors when they were not.

29. Information pertinent to the falsity of that Declaration of inventorship was not provided to the Patent Office during the reissue application process for the '610 Patent by any of Carnegie, Kowalczyk, Hemley, Mao, Yan, or Li. Had that Patent Office had this information, it would not have reissued the '610 Patent as the '189 Reissue Patent naming Hemley, Mao, and Yan as co-inventors.

30. Moreover, while filing the '529 Application that led to the '189 Reissue Patent, Hemley, Mao, Li, Yan, Kowalczyk, and Carnegie falsely represented to the Patent Office that another mistake had been made regarding inventorship—that Frushour was not an inventor of the

subject matter claimed in the '189 Patent. Along with the reissue application for the '189 Patent, Carnegie's representative, Gary Kowalczyk, Director of Administration and Finance at Carnegie, signed a reissue application Declaration. Under oath, Carnegie, through Kowalczyk, claimed that a mistake had been made regarding the inventorship of the '610 Patent, and that Frushour was not an inventor of the subject matter claimed in the '189 Patent.

31. That was a false oath. Frushour was a co-inventor of the subject matter claimed in the '189 Patent. Frushour contributed to the conception of the subject matter claimed in the '189 Patent. Frushour's co-inventorship is corroborated by the '266 Application, evidence produced by Carnegie in May 2020, and evidence produced by Frushour in response to subpoena in June 2020, as well as his deposition testimony from June 11, 2020.

32. But for the false representations to the Patent Office in the Kowalczyk Declaration that Frushour was not an inventor of the subject matter claimed in the '610 Patent, the Patent Office would not have reissued it as the '189 Patent.

33. Hemley, Mao, Yan, Carnegie, and Kowalczyk committed inequitable conduct by failing to inform the Patent Office that they had not investigated the ownership question with all of the original inventors. This was material information. The Patent Office had no reason to believe that the '189 Patent failed to name the correct inventors because Carnegie did not inform the Patent Office of its failure to investigate with Frushour his status as an inventor. Had Carnegie informed the Patent Office that it did not have full information, the Patent Office would have requested additional information regarding the alleged mistake and Frushour's contribution to the claimed subject matter, and refused to reissue the '189 Patent to Carnegie naming Hemley, Mao, Yan, and Li as the inventors.

34. Moreover, Hemley, Mao, Yan, Carnegie, and Kowalczyk committed inequitable conduct by failing to inform the Patent Office that the prior owner of the '610 patent disputed their claim that Hemley, Mao, Yan had contributed to the conception of the claimed subject matter. Carnegie's attorney had been informed by the attorney prosecuting the '610 Patent that no mistake had been made during the prosecution of the '610 Patent. This was material information that they withheld from the Patent Office. Had Carnegie informed the Patent Office that the prior owner disputed the existence of any alleged mistake in inventorship, the Patent Office would have required additional information, and refused to reissue the '189 Patent to Carnegie naming only Hemley, Mao, Yan, and Li as co-inventors.

35. Upon information and belief, Hemley, Mao, Li, Yan, Carnegie, and Kowalczyk had specific intent to deceive the Patent Office about Frushour's co-inventorship of the subject matter claimed in the '189 Patent, to falsely obtain recognition in the scientific community for Hemley, Mao, and Yan as the inventors of the claimed subject matter, and to secure the '189 Patent in the name of their employer and the applicant, Carnegie.

36. Similarly, on information and belief, Li committed inequitable conduct with respect to the '529 Application that reissued as the '189 Patent. Li signed a Combined Declaration and Power of Attorney on May 22, 2002, that declared that Frushour was a co-inventor of the subject matter claimed in the '189 Reissue Patent. Frushour contributed to the conception of the subject matter claimed in the '189 Reissue Patent. Frushour's co-inventorship is corroborated by the '266 Application and documentary and testimonial evidence produced by Frushour in response to subpoena, including a Phoenix Crystal Corporation lab notebook, contemporaneously maintained by Li.

37. Upon information and belief, Li specifically intended to deceive the Patent Office on inventorship in order to secure the '189 Reissue Patent for his former colleagues at Carnegie (Hemley, Mao, and Yan) in exchange for them including Li among the list of co-inventors to be recognized by the scientific community for the invention.

38. As a named inventor of the '266 Application that issued as the '610 Patent, and as a named inventor of the '529 Application that reissued as the '189 Reissue Patent, Li owed a duty of candor to the Patent Office. Under 37 C.F.R. § 1.56, Li had a duty to disclose information material to the patentability of the '610 Patent and the '189 Reissue Patent, including inventorship conflicts.

39. Despite owing a duty of candor to the Patent Office, Li knew, but chose not to disclose to the Patent Office, that Frushour was a co-inventor of the subject matter claimed in the '529 Application. Consistent with Li's Combined Declaration dated May 22, 2002, Frushour is an inventor, and there was no mistake in naming Frushour as an inventor. But for Li's violation of his duty of candor, on information and belief, the Patent Office would not have reissued the '189 Reissue Patent to Carnegie.

**In The Alternative, The '189 Reissue Patent Is A Reissue Of A Patent Procured By Inequitable Conduct**

40. If the July 12, 2004, Declaration of Hemley, Mao, and Yan is to be believed, Li committed inequitable conduct with respect to the earlier '266 Application that issued as the '610 Patent.

41. According to Hemley's, Mao's, and Yan's Declaration dated July 12, 2004 (if believed to be true), Li was formerly a colleague of theirs at Carnegie. He knew at the time he filed the '266 Application with Frushour (leading to the '610 Patent) that Hemley, Mao, and Yan were the inventors of the subject matter claimed in the '266 Application and that Hemley, Mao, and Yan

had not worked or spoken with Frushour. But Li failed to disclose to the Patent Office that Hemley, Mao, and Yan were also inventors of the subject matter claimed in the '266 Application and that Frushour was not an inventor. Li, in fact, declared to the contrary in his Declaration dated May 22, 2002, affirming that only he and Frushour were the inventors.

42. If the Declaration of Hemley, Mao, and Yan dated July 12, 2004, is to be believed, then upon information and belief, Li specifically intended to deceive the Patent Office in the submission of the Declaration dated May 22, 2002, filed in the '266 Application. According to Hemley's, Mao's, and Yan's Declaration (if believed to be true), and despite owing a duty of candor to the Patent Office, Li knew but deliberately chose not to disclose to the Patent Office that Hemley, Mao, and Yan were co-inventors of the subject matter claimed in the '266 Application and that Frushour was not an inventor.

43. Again, according to Hemley's, Mao's, and Yan's Declaration (if believed to be true), but for Li's violation of his duty of candor by failing to disclose to the Patent Office that Hemley, Mao, and Yan were co-inventors and that Frushour was not an inventor, the Patent Office would not have issued the '610 Patent to Frushour and Li.

44. Similarly, Li committed inequitable conduct in connection with the '266 Application because, if Hemley's, Mao's, and Yan's Declaration is to be believed, Li could not have believed in good faith that Frushour was an inventor at the time of his inventor oath in the '266 Application.

45. Li signed the same Declaration as Frushour, in which both claimed to have been the inventors of the subject matter. Li did not dispute that Frushour was an inventor when he signed the Declaration in May 2002. Nor did he ever inform Frushour of his belief that Frushour was not an inventor. Li did not communicate with Frushour about the facts of the invention after signing

his Declaration. There was no new factual information available to Li in January 2009, when the application for the '189 Reissue Patent was filed, that he did not have at the time of his May 2002 Declaration. Thus, to the extent that Hemley's, Mao's, and Yan's Declaration is believed to be true and Li believes Frushour was not an inventor, he necessarily had that belief at the time he signed his Declaration in the '266 Application. Li therefore falsely stated under oath that Frushour was an inventor and he knowingly and intentionally sought to deceive the Patent Office through his false Declaration.

46. Li's inequitable conduct with respect to the '266 Application taints not just the '610 Patent, but also the '189 Reissue Patent, because inequitable conduct cannot be cured by reissue.

47. Whichever way one looks at the situation, the '189 Reissue Patent is unenforceable due to inequitable conduct. Either Frushour is an inventor or he is not. If he is not an inventor, Li falsely stated that he was when he signed the original joint Declaration. Li cannot take back that Declaration now on the basis that he originally acted in good faith. There is no "new" factual information supporting any claim that Frushour was not an inventor, and Li had an obligation to read and understand what he signed on the basis of the facts then known to him, which was that Frushour was an inventor. On the other hand, if Li acted in good faith when he signed the Declaration (which is consistent with the documentary and testimonial evidence in this case), there is no factual or legal basis upon which he could later recant that Declaration. If Frushour is an inventor, then Li, Hemley, Mao, Yan, Li, Carnegie, and Kowalczyk committed inequitable conduct by submitting a false Declaration that a mistake as to inventorship had been made. There was no mistake. Frushour is an inventor.

48. Either way, someone deliberately lied to the Patent Office, and that lie was material to patentability. Had the Patent Office been aware of the true facts, they either would not have

issued the '610 Patent to Li and Frushour or not re-issued the '189 Reissue Patent to Li, Hemley, Mao, and Yan.

49. The '189 Reissue patent is therefore unenforceable due to inequitable conduct.

50. These specific examples of inequitable conduct described above are intended to be exemplary only, as further facts developed through discovery may provide additional examples.

#### **SIXTH AFFIRMATIVE DEFENSE**

##### **(Invalid Reissue)**

51. Under pre-AIA 35 U.S.C § 251, reissue of the '189 Patent was only lawful if it corrected an error made without any deceptive intention. On information and belief, Frushour, Li, and Phoenix Crystal Corporation purposefully excluded Hemley, Mao, and Yan Applicants as co-inventors of the '266 Application and purposefully named themselves as the sole inventors of the '266 Application. Deliberate actions taken during prosecution, such as those taken by Frushour, Li, and Phoenix Crystal Corporation during prosecution of the '610 Patent, are not errors made without any deceptive intention under pre-AIA § 251. The '189 Patent therefore reissued contrary to pre-AIA § 251 and is invalid.

#### **SEVENTH AFFIRMATIVE DEFENSE**

##### **(No Standing)**

52. After the change in inventorship effected by the issuance of the '189 Patent, Hemley, Mao, and Yan were each made a joint owner of the '189 Patent. Because no documents are recorded with the USPTO reflecting that Hemley, Mao, or Yan assigned their rights in the '189 Patent to Carnegie, on information and belief, Plaintiffs lack standing to sue for infringement of the '189 Patent. Additionally, the '171 Application was published on February 3, 2005, as U.S. Patent Application Publication No. 2005/0025886. Paragraph [0002] of that document states “This

invention was made with U.S. government support under grant number EAR-0135626 from the National Science Foundation. The U.S. government has certain rights in the invention.” The ’189 Patent lacks any such statement. On information and belief, Carnegie failed to notify the federal government that it has rights in the ’189 Patent within the time allotted under 35 U.S.C. § 202(c)(2), giving the federal government no notice or opportunity to exercise its rights in the ’189 Patent. In addition, on information and belief, M7D Corporation has not established that it has standing to enforce either of the asserted patents. M7D Corporation has not alleged that it is an exclusive licensee or owner of either asserted patent and a non-exclusive licensee of a patent has no standing to sue for infringement.

#### **OTHER DEFENSES**

53. Fenix’s investigation of its defenses is continuing, Fenix expressly reserves its rights to allege and assert any additional affirmative defenses under Rule 8 of the Federal Rules of Civil Procedure, the patent laws of the United States, and any other defense, at law or in equity, that may now exist or in the future be available based upon discovery and further investigation in this case.

#### **COUNTERCLAIMS**

For its Amended Counterclaims against Plaintiffs/Counterclaim-Defendants Carnegie Institution of Washington and M7D Corporation (collectively, “Counterclaim-Defendants”), Defendant and Counterclaim-Plaintiff Fenix Diamonds LLC (“Fenix”) states as follows:

1. The admissions, allegations, denials, and Amended Affirmative Defenses above are realleged and incorporated by reference as if fully set forth herein.

## **PARTIES**

2. Fenix realleges and incorporates by reference Paragraph 1 of its Amended Counterclaims as if fully set forth herein.

3. Fenix is a New York Domestic Limited Liability Company with a headquarters at 592 Fifth Avenue, #1103, New York, New York 10036.

4. According to the Amended Complaint, Carnegie is a Washington D.C. corporation with its headquarters and principal place of business at 1530 P St. NW, Washington, D.C. 20005.

5. According to the Amended Complaint, M7D is a Delaware corporation with its headquarters and principal place of business at 6700 Virginia Manor Road, Beltsville, M.D. 20705.

## **JURISDICTION AND VENUE**

6. Fenix realleges and incorporates by reference Paragraphs 1–5 of its Amended Counterclaims as if fully set forth herein.

7. These Amended Counterclaims arise under the Federal Declaratory Judgment Act and the Patent Laws of the United States, 28 U.S.C. §§ 2291 and 2202 and 35 U.S.C. § 100 *et seq.* The Court has subject matter jurisdiction over Fenix’s counterclaims under 38 U.S.C. §§ 1331, 1367, and 1338(a) because the Amended Counterclaims are so related to the claims in this action as to form part of the same case or controversy under Article III of the United States Constitution.

8. This Court has personal jurisdiction over Carnegie and M7D because, among other things, these Counterclaim-Defendants have consented and subjected themselves to the jurisdiction of this Court by filing their Complaint and Amended Complaint against Fenix.

9. On January 9, 2020, Plaintiffs filed their original Complaint, Dkt. 1, in the Southern District of New York. On March 5, 2020, Plaintiffs filed their Amended Complaint, Dkt. 16, in the Southern District of New York. Both complaints allege infringement of U.S. Patents No.

6,858,078 (“the ’078 Patent”) and U.S. Patent No. RE41,189 (“the ’189 Patent”) (collectively, “the Asserted Patents”).

10. On March 11, 2020, Plaintiffs filed their Local Patent Rule 6 Disclosure to Defendant Fenix Diamonds LLC alleging infringement of claims 1, 6, 7, 11, 12, and 16 of the ’078 Patent and claims 1 and 2 of the ’189 Patent (collectively, “the Asserted Claims”).

11. Fenix denies infringing the Asserted Patents.

12. Fenix denies that the Asserted Claims are valid.

13. Fenix denies that the Asserted Patents are enforceable.

14. Therefore, an actual and justiciable controversy between the parties as to infringement and enforceability of the Asserted Patents and as to the validity of the Asserted Claims.

15. This Court has personal jurisdiction over Plaintiffs by virtue of their filing of this case in the Southern District of New York.

16. To the extent venue in this Court is proper for the claims set out in Plaintiffs’ Amended Complaint, venue is proper for Fenix’s counterclaims.

### **FIRST COUNTERCLAIM**

#### **(Declaration of Non-Infringement of the ’189 Patent)**

17. Fenix realleges and incorporates by reference Paragraphs 1–16 of its Amended Counterclaims as if fully set forth herein.

18. A present, genuine, and justiciable controversy exists between Fenix and Counterclaim-Defendants regarding, inter alia, the issue of whether Fenix infringes or would infringe any valid or enforceable claim of the ’189 Patent.

19. The manufacture, use, offer for sale, or sale of any diamonds sold by Fenix does not infringe, and has never infringed, any valid and enforceable claim of the '189 Patent directly, contributorily or by inducement, literally or by equivalents.

20. Fenix is entitled to a judicial determination and declaration that it does not infringe any valid, non-abandoned, and enforceable claim of the '189 Patent.

## **SECOND COUNTERCLAIM**

### **(Declaration of Non-Infringement of the '078 Patent)**

21. Fenix realleges and incorporates by reference Paragraphs 1–20 of its Amended Counterclaims as if fully set forth herein.

22. A present, genuine, and justiciable controversy exists between Fenix and Counterclaim-Defendants regarding, inter alia, the issue of whether Fenix infringes or would infringe any valid or enforceable claim of the '078 Patent.

23. The manufacture, use, offer for sale, or sale of any diamonds sold by Fenix does not infringe, and has never infringed, any valid and enforceable claim of the '078 Patent directly, contributorily or by inducement, literally or by equivalents.

24. Fenix is entitled to a judicial determination and declaration that it does not infringe any valid, non-abandoned and enforceable claim of the '078 Patent.

## **THIRD COUNTERCLAIM**

### **(Declaration of Invalidity of the '189 Patent)**

25. Fenix realleges and incorporates by reference Paragraphs 1–24 of its Amended Counterclaims as if fully set forth herein.

26. A present, genuine, and justiciable controversy exists between Fenix and Counterclaim-Defendants regarding, inter alia, the invalidity of the '189 Patent.

27. The Asserted Claims of the '189 Patent are invalid, in whole or in part, for failure to satisfy one or more of the requirements of 35 U.S.C. §§ 101, 102, 103, 111, 112, 116, 132, and 251.

28. The Asserted Claims of the '180 Patent are invalid for the reasons set forth in Fenix Diamonds LLC's Preliminary Invalidity Contentions Under Local Patent Rule 7 ("Preliminary Invalidity Contentions") served on March 20, 2020, and Fenix Diamonds LLC's First Supplemented Preliminary Invalidity Contentions Under Local Patent Rule 7 ("First Supplemented Preliminary Invalidity Contentions") served on May 26, 2020, incorporated herein by reference, which include the following invalidity grounds, and for other invalidity grounds that will be provided as this action progresses.

29. European Patent Application No. 0 671 82 to Anthony et al. ("Anthony") invalidates the Asserted Claims of the '189 Patent under at least 35 U.S.C. § 102.

30. U.S. Patent No. 4,124,690 to Strong et al. ("Strong") invalidates the Asserted Claims of the '189 Patent under at least 35 U.S.C. § 103.

31. The Asserted Claims of the '189 Patent are not enabled and thus invalid under at least 35 U.S.C. § 112 because the equipment described in the '189 Patent is incapable of applying temperatures and pressures throughout the full scope of the claimed range.

32. Upon information and belief, Plaintiffs discovered that significant experimentation above the technical details described in the '189 Patent and generally known in the art at the time of purported invention would be required to make equipment capable of applying temperatures and pressures throughout the full scope of the claimed range.

33. Upon information and belief, Plaintiffs discovered that significant experimentation above the technical details described in the '189 Patent and generally known in the art at the time

of purported invention would be required to accurately determine the diamond-to-graphite transition line that separates the graphite stable region from the diamond stable region.

34. The Asserted Claims of the '189 Patent are not patent eligible and thus invalid under 35 U.S.C. § 101. The Asserted Claims of the '189 Patent merely apply equipment that existed before the date of purported invention to monopolize the well-known natural principle that high pressures and temperatures improve diamond quality.

35. The '189 Patent is invalid for being an improper reissue under pre-AIA 35 U.S.C. § 251.

36. Under pre-AIA 35 U.S.C § 251, reissue of the '189 Patent was only possible if it corrected an error made without any deceptive intention. On information and belief, Frushour, Li, and Phoenix Crystal Corporation purposefully excluded Hemley, Mao, and Yan Applicants as co-inventors of the '266 Application, and purposefully named themselves as the sole inventors of the '266 Application. Deliberate actions taken during prosecution, such as those taken by Frushour, Li, and Phoenix Crystal Corporation during prosecution of the '610 Patent, are not errors made without any deceptive intention under pre-AIA § 251. The '189 Patent therefore reissued contrary to pre-AIA § 251 and is invalid.

37. Accordingly, Fenix is entitled to a declaratory judgment that the Asserted Claims of the '189 Patent are invalid.

#### **FOURTH COUNTERCLAIM**

##### **(Declaration of Invalidity of the '078 Patent)**

38. Fenix realleges and incorporates by reference Paragraphs 1–37 of its Amended Counterclaims as if fully set forth herein.

39. A present, genuine, and justiciable controversy exists between Fenix and Counterclaim-Defendants regarding, inter alia, the invalidity of the '078 Patent.

40. The claims of the '078 Patent are invalid, in whole or in part, for failure to satisfy one or more of the requirements of 35 U.S.C. §§ 101, 102, 103, 111, 112, 116, 132, and 251.

41. The Asserted Claims of the '078 Patent are invalid for the reasons set forth in Fenix's Preliminary Invalidity Contentions on March 20, 2020, and Fenix's First Supplemented Preliminary Invalidity Contentions on May 26, 2020, incorporated herein by reference, which include the following invalidity grounds, and for other invalidity grounds that will be provided as this action progresses.

42. U.S. Patent No. 5,628,824 to Vohra et al. ("Vohra") invalidates the Asserted Claims of the '078 Patent under at least 35 U.S.C. § 102.

43. Vohra in view of U.S. Patent No. 5,449,412 to Pinneo ("Pinneo") invalidates the Asserted Claims of the '078 Patent under at least 35 U.S.C. § 103.

44. The Asserted Claims of the '078 Patent are not enabled and thus invalid under 35 U.S.C. § 112 because the temperature sensing equipment described in the '078 Patent is incapable of providing temperature measurements necessary to maintain a sub-20°C growth surface gradient. One of ordinary skill in the art would not be able to practice the purported invention in the Asserted Claims without undue experimentation.

45. Upon information and belief, Plaintiffs discovered that significant experimentation beyond the technical details described in the '078 Patent and generally known in the art at the time of purported invention would be required to develop a temperature sensor with the requisite accuracy.

46. The Asserted Claims of the '078 Patent are not enabled and thus invalid under 35 U.S.C. § 112 because the equipment described in the '078 Patent is incapable maintaining a growth surface gradient at any value in the claimed range (i.e., 0–20°C), let alone throughout the full scope of the claimed range (e.g., 0°C), even if it was possible to accurately measure all growth surface temperatures.

47. Upon information and belief, Plaintiffs discovered that significant experimentation beyond the technical details described in the '078 Patent and generally known in the art at the time of purported invention would be required to make equipment capable of maintaining a growth surface gradient at any point in the claimed range (i.e., 0–20°C), let alone throughout the full scope of the claimed range (e.g., 0°C), even if it was possible to accurately measure all growth surface temperatures.

48. The Asserted Claims of the '078 Patent are not patent eligible and thus invalid under 35 U.S.C. § 101. The Asserted Claims of the '078 Patent merely apply equipment that existed before the date of purported invention to monopolize the well-known natural principle that uniform diamond growth requires uniform growth surface temperatures.

49. For example, upon information and belief, Plaintiffs have represented that it is impossible to grow diamonds through microwave plasma chemical vapor deposition without infringing the '078 Patent, thus evidencing Plaintiffs' intent to monopolize this natural principle.

50. Accordingly, Fenix is entitled to a declaratory judgment that the Asserted Claims of the '078 Patent are invalid.

## **FIFTH COUNTERCLAIM**

### **(Declaratory Judgment of Unenforceability Due to Inequitable Conduct)**

51. Fenix realleges and incorporates by reference Paragraphs 1–50 of its Amended Counterclaims as if fully set forth herein.

52. The '189 Patent is unenforceable because it was acquired through inequitable conduct or, in the alternative, because the '189 Patent is a reissue of a patent that was procured by inequitable conduct.

### **The '189 Reissue Patent Was Acquired Through Inequitable Conduct**

53. On June 3, 2002, Robert H. Frushour and Wei Li filed U.S. Patent Application No. 10/161,266 (“the '266 Application”), which listed Frushour and Li as joint inventors. The '266 Application was accompanied by a Combined Declaration and Power of Attorney. That Declaration included the signed oaths of inventorship of both Frushour and Li. It states as follows: “I believe I am . . . an original, first and joint inventor . . . of the subject matter which is claimed and for which a patent is sought on the invention entitled: METHOD OF MAKING ENHANCED CVD DIAMOND.” The signed oaths of inventorship further state “I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true.” On May 22, 2002, Frushour and Li assigned their rights in the '266 Application to Phoenix Crystal Corporation and the Application eventually issued as the '610 patent on November 2, 2004.

54. The '610 patent relates to high-pressure/high-temperature processes for single crystal CVD diamond. Dr. Frushour is listed as an inventor on at least 20 United States patents related to high-pressure/high-temperature diamond technology.

55. On July 13, 2004, Russell Hemley, Ho-Kwang Mao, and Chih-Shiue Yan filed U.S. Patent Application No. 10,889,171 (“the '171 Application”), which listed Hemley, Mao, and Yan

as joint inventors. Hemley, Mao, and Yan assigned the '171 Application to Carnegie Institution of Washington ("Carnegie"), effective July 12, 2004.

56. Along with the '171 Application, Hemley, Mao, and Yan included a request for an interference proceeding with the '266 Application, accompanied by a Declaration signed by Hemley, Mao, and Yan on July 12, 2004. The interference request and Declaration were made part of the file for the '266 Application on August 30, 2004. Hemley, Mao, and Yan submitted the Declaration to the Patent Office without ever speaking with Frushour.

57. The claims of the '171 Application were drafted to be identical to the claims of the '266 Application and the '610 Patent. If the '171 Application and Declaration are to be believed, neither Frushour nor Li were inventors of the subject matter claimed in the '610 and '189 Patents; only Hemley, Mao, and Yan were.

58. On June 11, 2020, Frushour appeared for depositions and testified under oath as to his contributions to the subject matter described and claimed in the '610 Patent. At the June 11, 2020 deposition, Frushour corroborated his testimony with the '266 Application that led to the '610 Patent, the Combined Declaration of Frushour and Li, and the contemporaneous lab notebooks of Li, which Frushour had maintained since they were created at Phoenix Crystal Corporation.

59. At the June 11, 2020 deposition, Dr. Frushour reviewed the Declaration of Hemley, Mao, and Yan dated July 12, 2004, and disagreed with its content. Again, this Declaration was submitted by Hemley, Mao, and Yan without ever speaking to Frushour, a named inventor on the '266 Application and the '610 Patent.

60. The Declaration of Hemley, Mao, and Yan dated July 12, 2004, contains false statements. Contrary to the Declaration, Hemley, Mao, and Yan did not convey the claimed

annealing steps to Frushour or Li. Li's contemporaneously maintained notebook does not indicate that Hemley, Mao, or Yan provided any annealing conditions to use. Instead, Frushour and Li already knew what process conditions to use when anneal CVD diamonds because (i) they had previously induced color change in natural diamonds using the exact same annealing conditions, (ii) they thought those same annealing conditions would also work to induce color change in CVD diamond, and (iii) that process did, in fact, successfully induce the same color change in CVD diamonds.

61. On May 6, 2004, Paul Kokulis, the prosecuting attorney for the '171 Application, wrote to James Singer, the prosecuting attorney for the '266 Application. Kokulis expressed the view his client, Carnegie Institution of Washington, was the rightful inventor of the claims in the '266 Application. On June 17, 2004, Singer responded, requesting documents in support of Carnegie's claim to inventorship. Singer stated that he had no reason to believe the inventorship was incorrect and would continue to believe the inventorship was correct until Carnegie could provide evidence otherwise. On June 25, 2004, Kokulis responded but did not provide any such evidence. On July 13, 2004, Kokulis filed the '171 Application along with the Declaration dated July 12, 2004, attempting to provoke an interference. On November 22, 2006, the U.S. Patent Office rejected the Declaration and claims of the '171 Application, and Carnegie allowed the '171 Application to go abandoned on August 15, 2007.

62. On October 24, 2003, Phoenix Crystal Corporation assigned the '266 Application to GE Superabrasives, Inc. (effective October 1, 2003).

63. On December 31, 2003, GE Superabrasives, Inc. signed an agreement assigning its rights in the '266 Application to Diamond Innovations, Inc.

64. On November 2, 2004, the '266 Application issued as the '610 Patent, owned at the time by Diamond Innovations, Inc. and listing Frushour and Li as the sole inventors.

65. On September 4, 2008, Diamond Innovations, Inc. signed an agreement (effective June 30, 2008) transferring its interest in the '610 Patent to Carnegie Institution of Washington, subject to a non-exclusive license. This is the same Carnegie that tried to provoke an interference proceeding with the Application that led to the '610 Patent, based on a false Declaration.

66. On January 30, 2009, Carnegie Institution of Washington filed U.S. Patent Application No. 12/362,529 ("the '529 Application"), seeking reissue of the '610 Patent. In the '529 Application, Carnegie, through the Declaration of Gary Kowalczyk, falsely declared that the '610 Patent contained "[a]t least one error"—namely, that "Robert H. Frushour is incorrectly named on the 6,811,610 patent as an inventor and Russell J, Hemley, Ho-Kwang Mao and Chih-Shiue Yan are incorrectly not named as inventors." In the Declaration, Kowalczyk and Carnegie, as well as each of Hemley, Mao, and Yan, did not inform the Patent Office of the previous failed attempt to challenge the inventorship of the '610 Patent, omitted evidence that Diamond Innovations, Inc. believed Li and Frushour to be the correct inventors, and failed to explain that Carnegie, Kowalczyk, Hemley, Mao, and Yan had never contacted Frushour to discern whether he contributed to the claimed invention. Li could not have provided any credible information that Frushour was not an inventor since it would directly contradict Li's own Declaration under oath to the Patent Office in the '266 Application on May 22, 2002. At a minimum, Kowalczyk had an obligation to contact Frushour before declaring to the Patent Office he believed Frushour was not an inventor. Knowing that Frushour was a named inventor of the '610 Patent, for Kowalczyk to state that "Frushour is incorrectly named on the 6,811,610 as an inventor" was a knowingly false statement, or at best a willfully blind statement, intended to deceive the Patent Office and to

deprive them of material knowledge that Kowalczyk knew or should have known undermined his claim.

67. Had the Patent Office known any of these material facts, it would have required further investigation into Carnegie's and Kowalczyk's claim of erroneous inventorship, and the '189 Patent would not have issued listing Li, Hemley, Mao, and Yan as inventors.

68. There was no mistake in the identification of Frushour and Li as inventors of the '610 Patent. Despite asserting a mistake in inventorship in the '529 Application, Carnegie and Kowalczyk did not include a Declaration in the reissue application from Mao, Hemley, Yan, or any of the named inventors of the '610 Patent. Moreover, no one contacted Frushour in connection with the reissue application to inquire whether there was a mistake in inventorship in the '610 Patent. The '529 Application later reissued as the '189 Reissue Patent.

69. The '189 Reissue Patent recites identical specification, figures and claims as the '610 Patent.

70. In contrast to the '610 Patent, which names Frushour and Li as the inventors of the claimed subject matter, the '529 Application improperly added Carnegie scientists Russell J. Hemley, Ho-Kwang Mao, and Chih-shiue Yan as the inventors of the claimed subject matter. These are the same Hemley, Mao, and Yan that submitted a false Declaration in the '171 Application, an Application that the Patent Office rejected and Carnegie abandoned after failing to provoke an inventorship challenge in the Patent Office.

71. In contrast to the '610 Patent, which named Frushour and Li as the inventors of the claimed subject matter, the '529 Application improperly removed Frushour as an inventor of the claimed subject matter. Again, no one contacted Frushour about the reissue application to inquire whether there was a mistake in inventorship in the '610 Patent, much less whether he should be

removed as an inventor. Carnegie and Kowalczyk therefore lacked a sufficient basis to allege Frushour was incorrectly named as an inventor.

72. Hemley, Mao, Yan, and Li, who are now named as co-inventors of the '189 Reissue Patent, as well as Carnegie and Kowalczyk, as the applicant for the '189 Patent, owed a duty of candor to the Patent Office. Under 37 C.F.R. § 1.56, they had a duty to disclose information material to the patentability of the '189 Patent, including inventorship conflicts.

73. But Hemley, Mao, Yan, Carnegie, and Kowalczyk committed inequitable conduct by submitting a false Declaration to the Patent Office during the prosecution of the '171 Application. Neither that Declaration nor the failed attempt to provoke an interference was brought to the attention of the Patent Office in the '529 Application leading to the '189 Reissue Patent.

74. Upon information and belief, Carnegie and Kowalczyk specifically intended to deceive the Patent Office to falsely obtain recognition in the scientific community for its scientists, Hemley, Mao, and Yan, as the inventors of the claimed subject matter, and to secure the '189 Reissue Patent for Carnegie. Hemley, Mao, Yan, Carnegie, and Kowalczyk knew that they did not convey the claimed annealing steps to Frushour or Li, but still chose to submit a false Declaration to that effect in 2004 to the Patent Office. With an intent to deceive the Patent Office, they falsely alleged a mistake in inventorship to the Patent Office nearly five years after they abandoned their original inventorship challenge to obtain the '189 Reissue Patent and add themselves as named inventors when they were not.

75. Information pertinent to the falsity of that Declaration of inventorship was not provided to the Patent Office during the reissue application process for the '610 Patent by any of Carnegie, Kowalczyk, Hemley, Mao, Yan, or Li. Had that Patent Office had this information, it

would not have reissued the '610 Patent as the '189 Reissue Patent naming Hemley, Mao, and Yan as co-inventors.

76. Moreover, while filing the '529 Application that led to the '189 Reissue Patent, Hemley, Mao, Li, Yan, Kowalczyk, and Carnegie falsely represented to the Patent Office that another mistake had been made regarding inventorship—that Frushour was not an inventor of the subject matter claimed in the '189 Patent. Along with the reissue application for the '189 Patent, Carnegie's representative, Gary Kowalczyk, Director of Administration and Finance at Carnegie, signed a reissue application Declaration. Under oath, Carnegie, through Kowalczyk, claimed that a mistake had been made regarding the inventorship of the '610 Patent, and that Frushour was not an inventor of the subject matter claimed in the '189 Patent.

77. That was a false oath. Frushour was a co-inventor of the subject matter claimed in the '189 Patent. Frushour contributed to the conception of the subject matter claimed in the '189 Patent. Frushour's co-inventorship is corroborated by the '266 Application, evidence produced by Carnegie in May 2020, and evidence produced by Frushour in response to subpoena in June 2020, as well as his deposition testimony from June 11, 2020.

78. But for the false representations to the Patent Office in the Kowalczyk Declaration that Frushour was not an inventor of the subject matter claimed in the '610 Patent, the Patent Office would not have reissued it as the '189 Patent.

79. Hemley, Mao, Yan, Carnegie, and Kowalczyk committed inequitable conduct by failing to inform the Patent Office that they had not investigated the ownership question with all of the original inventors. This was material information. The Patent Office had no reason to believe that the '189 Patent failed to name the correct inventors because Carnegie did not inform the Patent Office of its failure to investigate with Frushour his status as an inventor. Had Carnegie informed

the Patent Office that it did not have full information, the Patent Office would have requested additional information regarding the alleged mistake and Frushour's contribution to the claimed subject matter, and refused to reissue the '189 Patent to Carnegie naming Hemley, Mao, Yan, and Li as the inventors.

80. Moreover, Hemley, Mao, Yan, Carnegie, and Kowalczyk committed inequitable conduct by failing to inform the Patent Office that the prior owner of the '610 patent disputed their claim that Hemley, Mao, Yan had contributed to the conception of the claimed subject matter. Carnegie's attorney had been informed by the attorney prosecuting the '610 Patent that no mistake had been made during the prosecution of the '610 Patent. This was material information that they withheld from the Patent Office. Had Carnegie informed the Patent Office that the prior owner disputed the existence of any alleged mistake in inventorship, the Patent Office would have required additional information, and refused to reissue the '189 Patent to Carnegie naming only Hemley, Mao, Yan, and Li as co-inventors.

81. Upon information and belief, Hemley, Mao, Li, Yan, Carnegie, and Kowalczyk had specific intent to deceive the Patent Office about Frushour's co-inventorship of the subject matter claimed in the '189 Patent, to falsely obtain recognition in the scientific community for Hemley, Mao, and Yan as the inventors of the claimed subject matter, and to secure the '189 Patent in the name of their employer and the applicant, Carnegie.

82. Similarly, on information and belief, Li committed inequitable conduct with respect to the '529 Application that reissued as the '189 Patent. Li signed a Combined Declaration and Power of Attorney on May 22, 2002, that declared that Frushour was a co-inventor of the subject matter claimed in the '189 Reissue Patent. Frushour contributed to the conception of the subject matter claimed in the '189 Reissue Patent. Frushour's co-inventorship is corroborated by the '266

Application and documentary and testimonial evidence produced by Frushour in response to subpoena, including a Phoenix Crystal Corporation lab notebook, contemporaneously maintained by Li.

83. Upon information and belief, Li specifically intended to deceive the Patent Office on inventorship in order to secure the '189 Reissue Patent for his former colleagues at Carnegie (Hemley, Mao, and Yan) in exchange for them including Li among the list of co-inventors to be recognized by the scientific community for the invention.

84. As a named inventor of the '266 Application that issued as the '610 Patent, and as a named inventor of the '529 Application that reissued as the '189 Reissue Patent, Li owed a duty of candor to the Patent Office. Under 37 C.F.R. § 1.56, Li had a duty to disclose information material to the patentability of the '610 Patent and the '189 Reissue Patent, including inventorship conflicts.

85. Despite owing a duty of candor to the Patent Office, Li knew but chose not to disclose to the Patent Office that Frushour was a co-inventor of the subject matter claimed in the '529 Application. Consistent with Li's Combined Declaration dated May 22, 2002, Frushour is an inventor, and there was no mistake in naming Frushour as an inventor. But for Li's violation of his duty of candor, on information and belief, the Patent Office would not have reissued the '189 Reissue Patent to Carnegie.

**In The Alternative, The '189 Reissue Patent Is A Reissue Of A Patent Procured By Inequitable Conduct**

86. If the July 12, 2004, Declaration of Hemley, Mao, and Yan is to be believed, Li committed inequitable conduct with respect to the earlier '266 Application that issued as the '610 Patent.

87. According to Hemley's, Mao's, and Yan's Declaration dated July 12, 2004 (if believed to be true), Li was formerly a colleague of theirs at Carnegie. He knew at the time he filed the '266 Application with Frushour (leading to the '610 Patent) that Hemley, Mao, and Yan were the inventors of the subject matter claimed in the '266 Application and that Hemley, Mao, and Yan had not worked or spoken with Frushour. But Li failed to disclose to the Patent Office that Hemley, Mao, and Yan were also inventors of the subject matter claimed in the '266 Application and that Frushour was not an inventor. Li, in fact, declared to the contrary in his Declaration dated May 22, 2002, affirming that only he and Frushour were the inventors.

88. If the Declaration of Hemley, Mao, and Yan dated July 12, 2004, is to be believed, then upon information and belief, Li specifically intended to deceive the Patent Office in the submission of the Declaration dated May 22, 2002, filed in the '266 Application. According to Hemley's, Mao's, and Yan's Declaration (if believed to be true), and despite owing a duty of candor to the Patent Office, Li knew but deliberately chose not to disclose to the Patent Office that Hemley, Mao, and Yan were co-inventors of the subject matter claimed in the '266 Application and that Frushour was not an inventor.

89. Again, according to Hemley's, Mao's, and Yan's Declaration (if believed to be true), but for Li's violation of his duty of candor by failing to disclose to the Patent Office that Hemley, Mao, and Yan were co-inventors and that Frushour was not an inventor, the Patent Office would not have issued the '610 Patent to Frushour and Li.

90. Similarly, Li committed inequitable conduct in connection with the '266 Application because, if Hemley's, Mao's, and Yan's Declaration is to be believed, Li could not have believed in good faith that Frushour was an inventor at the time of his inventor oath in the '266 Application.

91. Li signed the same Declaration as Frushour, in which both claimed to have been the inventors of the subject matter. Li did not dispute that Frushour was an inventor when he signed the Declaration in May 2002. Nor did he ever inform Frushour of his belief that Frushour was not an inventor. Li did not communicate with Frushour about the facts of the invention after signing his Declaration. There was no new factual information available to Li in January 2009, when the application for the '189 Reissue Patent was filed, that he did not have at the time of his May 2002 Declaration. Thus, to the extent that Hemley's, Mao's, and Yan's Declaration is believed to be true and Li believes Frushour was not an inventor, he necessarily had that belief at the time he signed his Declaration in the '266 Application. Li therefore falsely stated under oath that Frushour was an inventor and he knowingly and intentionally sought to deceive the Patent Office through his false Declaration.

92. Li's inequitable conduct with respect to the '266 Application taints not just the '610 Patent, but also the '189 Reissue Patent, because inequitable conduct cannot be cured by reissue.

93. Whichever way one looks at the situation, the '189 Reissue Patent is unenforceable due to inequitable conduct. Either Frushour is an inventor or he is not. If he is not an inventor, Li falsely stated that he was when he signed the original joint Declaration. Li cannot take back that Declaration now on the basis that he originally acted in good faith. There is no "new" factual information supporting any claim that Frushour was not an inventor, and Li had an obligation to read and understand what he signed on the basis of the facts then known to him, which was that Frushour was an inventor. On the other hand, if Li acted in good faith when he signed the Declaration (which is consistent with the documentary and testimonial evidence in this case), there is no factual or legal basis upon which he could later recant that Declaration. If Frushour is an inventor, then Li, Hemley, Mao, Yan, Li, Carnegie, and Kowalczyk committed inequitable conduct

by submitting a false Declaration that a mistake as to inventorship had been made. There was no mistake. Frushour is an inventor.

94. Either way, someone deliberately lied to the Patent Office, and that lie was material to patentability. Had the Patent Office been aware of the true facts, they either would not have issued the '610 Patent to Li and Frushour or not re-issued the '189 Reissue Patent to Li, Hemley, Mao, and Yan.

95. The '189 Reissue patent is therefore unenforceable due to inequitable conduct.

96. Accordingly, Fenix is entitled to a declaratory judgment that the '189 Patent is unenforceable due to inequitable conduct.

97. These specific examples of inequitable conduct described above are intended to be exemplary only, as further facts developed through discovery may provide additional examples.

#### **EXCEPTIONAL CASE**

Plaintiffs' conduct in this action renders it exceptional under 35 U.S.C. § 285. Fenix is entitled to recover its attorneys' fees and other expenses incurred in connection with the present action from Plaintiffs, jointly and severally.

#### **PRAYER FOR RELIEF**

WHEREFORE, Fenix prays that the Court enter judgment in its favor and against Counterclaim-Defendants as follows:

- a. Dismissing the Amended Complaint with prejudice and entering a judgment against Plaintiffs/Counterclaim-Defendants;
- b. Denying each request for relief made by Plaintiffs;

c. Declaring that Fenix has not infringed, contributed to the infringement of, or induced others to infringe, either directly or indirectly, any valid claims of the '189 Patent and the '078 Patent;

d. Declaring that the claims of the '189 Patent and the '078 Patent are invalid and unenforceable;

e. Declaring that this case is exceptional and awarding Fenix its attorneys' fees under 35 U.S.C. § 285;

f. Awarding Fenix its costs and expenses incurred in connection with the present Action; and

g. Awarding such other and further relief that the Court deems just and proper.

#### **DEMAND FOR JURY TRIAL**

Defendant and Counterclaim-Plaintiff Fenix Diamonds LLC demands trial by jury in this action.

Dated: June 23, 2020

Respectfully Submitted,

/s/ Steven H. Sklar

Daniel P. Waxman (DW-0599)  
BRYAN CAVE LEIGHTON PAISNER LLP  
1290 Avenue of the Americas  
New York, NY 10104  
Tel.: (212) 541-2040  
Fax: (212) 541-1339  
dpwaxman@bclplaw.com

Steven H. Sklar (*pro hac vice*)  
Maxwell B. Snow (*pro hac vice*)  
LEYDIG, VOIT & MAYER, LTD.  
180 North Stetson Avenue, Suite 4900  
Chicago, Illinois 60601  
Tel.: 312.616.5600  
Fax: 312.616.5700  
ssklar@leydig.com  
msnow@leydig.com

*Counsel for Defendant, Fenix Diamonds LLC*